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DRAWINGS ATTACHED

885,245



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COMPLETE SPECIFICATION

Theft Deterrent for Paper Securities

I, DAVID CHARLES STEVENS, a British Subject, of 33, Chancelot Road, Abbey Wood, London, S.E.2, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a theft deterrent for paper securities, particularly for paper securities having a readily realisable value such as Post Office postal orders, postage stamps, insurance stamps and banknotes.

The object of the present invention is to deter the planning and execution of thefts of such securities by ensuring that the result of any successful attempt to steal such securities become indelibly and distinguishingly marked, thereby making it impossible or at least dangerous to attempt to realise their value. A device in accordance with the present invention is cheap to install, can be incorporated in most conventional safes and strongrooms, and is reliable in operation.

According to the present invention there is provided in co-operation with a safe or strongroom for paper securities, means for applying a distinctive marking to at least a part of paper securities contained therein, and means for initiating the application of said marking when an attempt is made to steal said securities.

The distinctive marking may be applied by blowing a pulverulent substance over the securities or by spraying a liquid onto the surface of the securities. The distinctive marking can be one easily identifiable by eye, such as a colour marking, can be one which is identifiable by its ability to phosphoresce under ultraviolet radiation or can even be a material containing minute and harmless traces of a radioactive material which is detectable with a nuclear detector such as a Geiger counter.

The means for initiating the marking of

securities may be any of the methods used in conventional burglar alarms, for example, the means may be responsive to the vibrations caused by an attempt to break open the door of the safe or strongroom, may be initiated by unlawful entrants into the vicinity of the safe or strongroom breaking wires or obstructing beams of electromagnetic radiation from reaching suitable detectors, or may even be initiated by the bodies of intruders altering the electrical properties of resonant circuits disposed conveniently near the safe. Alternatively the safe or strongroom, or a part of the same, may be maintained at a pressure different from that of the ambient air so that when the safe or strongroom is opened the pressure change resulting will initiate the application of the distinctive marking.

One form of the invention will now be described with reference to the accompanying drawings in which:—

Figure 1 shows a diagrammatic view of a strongroom incorporating the deterrent,

Figure 2 is a section through the door of the strongroom and

Figure 3 is a circuit diagram of the electrical connections used in the device of Figure 1.

Referring to Figure 1, the safe 1 contains banknotes 2 arranged in bundles and stacked in trays 3 on shelves 4. Spaced above each shelf 4 is a pipe 5, each pipe 5 leading to a plurality of spray nozzles 6. The pipes and nozzles can be integral with the shelves 4 or they can be appendages to conventional shelves. Each pipe 5 leads to a main supply conduit 7 which in turn leads to a reservoir 8 containing a dye 9. The dye 9 is conveniently of very distinctive colour and is indelible. Mounted within the reservoir 8 is a capsule 10 containing gas under pressure. The capsule 10 has a frangible seal 11 (see Figure 3).

The safe 1 is provided with an inner wall 13 and an outer wall 14 which in combination define a volume 12. Referring to Figure

SEE ERRATA SLIP ATTACHED

2, it can be seen that the door of the safe is formed from an inner wall 15 and an outer wall 16 enclosing a volume 17. Mounted on the inner wall 13 of the safe is an inner seal 18 which provides a pressure seal between the inner wall 13 of the safe and the inner wall 15 of the safe door when the latter is closed. An outer seal 19 mounted on the outer wall of the safe door provides a further pressure seal between the outer wall 14 of the safe and the outer wall 16 of the safe door when the door is closed. Communicating passages 20 are provided in both the safe and safe door so that when the door is closed, the pressure seals 18 and 19 become effective and a uniform pressure may be maintained within the volumes 12 and 17.

Mounted within the safe 1 and communicating with the volume 12 is a cylinder of compressed air 21 and a pressure actuated relay 22. Also mounted within the safe is an initiation device 24 (to be described in greater detail later), a combined start, time and delay switch 25, and a battery 26. The mode of operation of these various components will now be described in greater detail with reference to Figure 3.

The initiation device 24 comprises an electrically ignitable explosively actuated plunger 23 which is positioned above the frangible seal 11 of the capsule 10, so that if the voltage of the battery 26 is applied across the electric igniter of the device 24, the initiation of the explosive charge drives the plunger 23 into the seal 11 and allows compressed gas within the capsule 10 to flow into the reservoir 8. Placed in the circuit in series with the initiation device 24 is the battery 26, the pressure actuated relay 22 and the combined start, time and delay switch 25. The pressure actuated relay 22 is arranged so that the contacts of the relay are closed only when the pressure within the volumes 12 and 17 fall below a certain predetermined value. The combined start, time and delay switch is arranged so that on operating the start mechanism, the contacts contained within the switch are closed after a predetermined delay and do not open again until after a predetermined time interval.

The operation of the deterrent in accordance with the invention is then as follows:—

The predetermined time interval is set to correspond to the period during which it is desired that the deterrent should be effective (i.e. from the time the safe is closed at night to the time it is desired to open it again the next day). The predetermined delay is set for about 15 minutes.

A conventional regulator valve connected between the compressed air cylinder and the volume 12 is opened, and is set to maintain the volume 12 at a pressure conveniently above that at which the pressure actuated relay is designed to operate. The final occupant of the

safe now prepares to leave and close the safe, but just before doing so initiates the combined start, time and delay switch. This combined start, time and delay switch ensures that there is sufficient time for the operator to close the door against the seals 18 and 19, and for the pressure within the volumes 12 and 17 to rise sufficiently so that the contacts of the pressure actuated relay 22 open before the battery 26 is connected across the relay 22. Any reduction in pressure occurring within the volumes 12 and 17 during the predetermined time interval will then result in a fracturing of the seal 11 and a release of indelible dye over the securities. This reduction of pressure would of course be caused by any successful attempt to break into the safe through the wall of the safe or by any opening of the door of the safe. When the predetermined time interval has elapsed, the contacts of the combined start, time and delay switch will open and thereby disconnect the pressure actuated relay 22 from the circuit, thus permitting a reduction of the pressure within the volumes 12 and 17 without fear of discharge of dye from the nozzles 6.

A deterrent in accordance with the invention is simple in construction and cannot be rendered inoperative by any act externally of safe once the device has been made effective, and the safe door closed. Furthermore the only maintenance required is the occasional replacement of the compressed air cylinder and occasional recharging of the battery. Warning devices can of course be fitted to ensure that these routine maintenance requirements are attended to when required.

Although the deterrent described is responsive to a reduction of air pressure within a part of the safe, it may be responsive to a rise in pressure, in which case the safe or a part thereof will be under reduced pressure during the operation of the deterrent. The deterrent may also be initiated by the means already used for initiating conventional burglar alarms.

#### WHAT I CLAIM IS:—

1. A theft deterrent in cooperation with a safe or strongroom for paper securities, comprising means for applying a distinctive marking to at least a part of paper securities within the safe or strongroom, and means for initiating the application of said marking when an attempt is made to steal said securities.

2. A theft deterrent as claimed in Claim 1, in which the distinctive marking is visually detectable.

3. A theft deterrent as claimed in Claim 2, in which the distinctive marking is made with an indelible dye.

4. A theft deterrent as claimed in any of Claims 1 to 3, in which the means for initi-

ating the application of said marking is controlled by a change in pressure within the safe or strongroom.

5. A theft deterrent for use with a safe or strongroom for paper securities substantially

as herein described with reference to Figures 1, 2 and 3 of the accompanying drawings.

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## ERRATA

SPECIFICATION No. 885,245

Page 1, lines 16—17, *after "securities" insert "is that the securities"*  
Page 1, line 17, *for "distinguishingly" read "distinguishably"*  
Page 2, line 95, *after "of" insert "the"*  
Page 2, line 104, *for "in" read "is"*

THE PATENT OFFICE

29th December, 1961

885245

COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale*

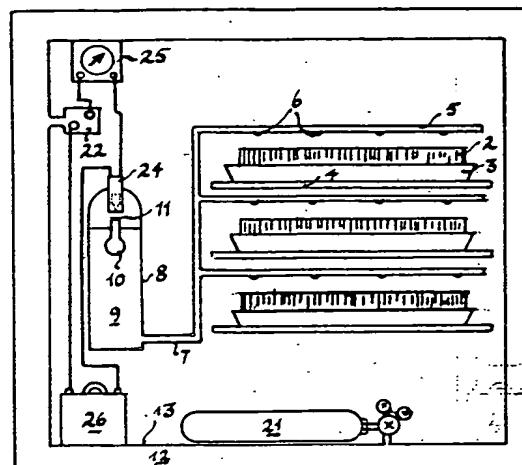


Fig. 1

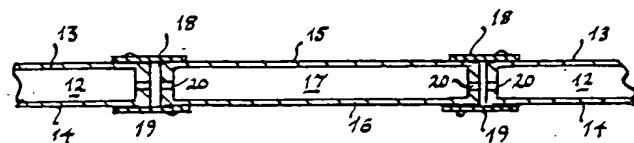


Fig. 2

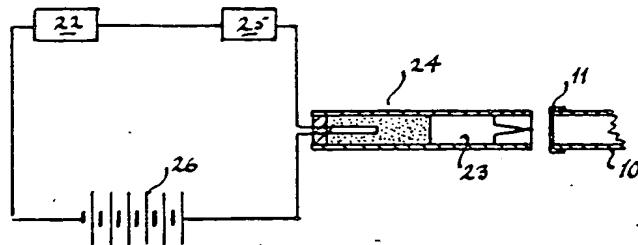


Fig. 3